

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
30 June 2005 (30.06.2005)

PCT

(10) International Publication Number  
**WO 2005/059154 A3**

(51) International Patent Classification<sup>7</sup>: **C12P 13/08**,  
C12N 9/04, I5/53, I/21 // (C12N 9/04, C12R 1:15)

Saarbrücken (DE). WITTMANN, Christoph [DE/DE];  
Am Kalkofen 13, 66127 Saarbrücken (DE).

(21) International Application Number:  
PCT/IB2004/004426

(81) Designated States (*unless otherwise indicated, for every  
kind of national protection available*): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ,  
TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA,  
ZM, ZW.

(22) International Filing Date:  
17 December 2004 (17.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
PCT/IB2003/006435  
18 December 2003 (18.12.2003) IB

(84) Designated States (*unless otherwise indicated, for every  
kind of regional protection available*): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,  
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,  
GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant (*for all designated States except US*): BASF  
AKTIENGESELLSCHAFT [DE/DE]; Rheinland-Pfalz,  
67056 Ludwigshafen (DE).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): ZELDER, Oskar  
[DE/DE]; Franz-Stutzel 8, 67346 Speyer (DE). KLOP-  
PROGGE, Corinna [DE/DE]; Diemersteinstr. 3, 67065  
Ludwigshafen (DE). SCHRÖDER, Hartwig [DE/DE];  
Benzstrasse 4, 69226 Nubloch (DE). HÄFNER, Stefan  
[DE/DE]; Luitpoldstrasse 11, 67063 Ludwigshafen (DE).  
KRÖGER, Burkhard [DE/DE]; Im Waldhof 1, 67117  
Limburgerhof (DE). KIEFER, Patrick [DE/DE]; Am  
Homburg 5G, 66123 Saarbrücken (DE). HEINZLE, El-  
mar [DE/DE]; Senator-Richard-Becher-Strasse 48, 66123

Published:

— with international search report

(88) Date of publication of the international search report:  
13 October 2005

*For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.*

(54) Title: METHODS FOR THE PREPARATION OF A FINE CHEMICAL BY FERMENTATION

(57) Abstract: The present invention features methods of increasing the production of a fine chemical, e.g., lysine from a mi-  
croorganism, e.g., *Corynebacterium* by way of deregulating an enzyme encoding gene, i.e., lactate dehydrogenase. In a preferred  
embodiment, the invention provides methods of increasing the production of lysine in *Corynebacterium glutamicum* by way of the  
expression of lactate dehydrogenase activity. The invention also provides a novel process for the production of lysine by way of  
regulating carbon flux towards oxaloacetate (OAA). In a preferred embodiment, the invention provides methods for the production  
of lysine by way of utilizing fructose or sucrose as a carbon source.